

What is claimed is:

1. A method of identifying non-conforming groups of items within a package, the package containing a plurality of groups of items, the method comprising:
 - obtaining a reference signal corresponding to a package containing conforming groups of items;
 - obtaining a signal corresponding to each of the plurality of groups of items in the package;
 - comparing the signal corresponding to each of the plurality of groups of items with the reference signal;
 - determining whether any of the plurality of groups of items is non-conforming; and
 - segregating the package based on whether the package contains a non-conforming group of items.
2. The method of claim 1, wherein the reference signal is a known value input by a user.
3. The method of claim 1, wherein the reference signal is obtained by performing a calibration run on a package containing conforming groups of items.
4. The method of claim 1, wherein the plurality of groups of items comprises individual columns of items aligned in the package.

5. The method of claim 1, wherein the plurality of groups of items comprises individual rows of items aligned in the package.
6. The method of claim 1, wherein the plurality of groups of items are arranged in a circular pattern.
7. The method of claim 1, wherein the plurality of groups of items are randomly placed within the package.
8. The method of claim 1, wherein the reference signal corresponds to a reflectance measurement.
9. The method of claim 1, wherein obtaining a signal corresponding to each of the plurality of groups of items in the package is accomplished by near infrared spectrographic analysis.
10. The method of claim 1, further comprising segregating the groups of items that are non-conforming from the groups of items that are conforming.
11. The method of claim 1, wherein determining whether any of the plurality of groups of items is non-conforming comprises:
 - computing an average reflectance signal based on the reflectance signals corresponding to each of the plurality of groups of items; and

comparing the average reflectance signal with the reference reflectance
signal.

12. The method of claim 11, wherein computing an average reflectance signal comprises
performing a first or second order differencing function.

13. The method of claim 11, wherein computing an average reflectance signal comprises
performing a smoothing function.

14. The method of claim 1, wherein obtaining a data signal corresponding to each of the
plurality of groups of items in the package comprises:

obtaining an individual reflectance measurement for each item in each of
the plurality of groups of items; and

combining the individual reflectance measurements for each of the
plurality of groups of items.

15. A spectrographic inspection system for analyzing a package containing a plurality of
items, wherein the plurality of items is arranged in an array having a column of items
and a row of items, the inspection system comprising;

a first plurality of sample probes, wherein each of the first plurality of
sample probes corresponds to an individual item location in the column of items;

a first spectrometer corresponding to the column of items, wherein the first
plurality of sample probes are coupled to the first spectrometer; and

16. The inspection system of claim 15, further comprising:

a second spectrometer corresponding to the row of items, wherein the second plurality of sample probes are coupled to the second spectrometer.

17. The inspection system of claim 15, wherein the pre-determined standard is a known reflectance signal corresponding to the plurality of items in the package.

18. The inspection system of claim 15, wherein the pre-determined standard is a known signal programmed into the processor by a user.

19. The inspection system of claim 15, wherein the pre-determined standard is obtained by performing a calibration run on a package containing items with a known reflectance signal.

20. The inspection system of claim 15, wherein the processor is further capable of being programmed to determine which item in the column of items is non-conforming.

21. The inspection system of claim 15, wherein the processor is further capable of being programmed to determine which item in the row of items is non-conforming.
22. The inspection system of claim 15, further comprising a rejection unit coupled to the processor, wherein the rejection unit is adapted to segregate the package depending on whether the plurality of items in the package conform to the pre-determined standard.
23. A fiber optic inspection manifold, comprising:
- a plurality of sample probes arranged in a plurality of columns and a plurality of rows;
 - a plurality of column spectrometers, wherein each of the plurality of column spectrometers corresponds to an individual column of sample probes;
 - a plurality of row spectrometers, wherein each of the plurality of row spectrometers corresponds to an individual row of sample probes; and
 - a processor coupled to the plurality of row spectrometers and the plurality of column spectrometers.
24. The fiber optic inspection manifold of claim 23, wherein each of the plurality of sample probes is adapted to gather spectrographic information from an item and wherein the processor is capable of being programmed to identify whether the item conforms to a pre-determined standard.

25. The fiber optic inspection manifold of claim 24, wherein the pre-determined standard is a known reflectance measurement.

26. An inspection system for verifying the contents of a package, the package containing an array of items arranged in a plurality of columns and a plurality of rows, the inspection system comprising:

a first plurality of sample probes coupled to a first spectrometer,
the first plurality of sample probes positioned to acquire data
corresponding to the items located in a column of the package;

a second plurality of sample probes coupled to a second
spectrometer, the second plurality of sample probes positioned to acquire
data corresponding to the items located in a row of the package.

27. The inspection system of claim 26, further comprising a processor coupled to the first spectrometer and the second spectrometer, the processor capable of being programmed to determine whether any of the array of items conform to a pre-determined standard.

28. A method of inspecting a package containing a plurality of groups of items, the method comprising:

- aligning the package with an imaging spectrographic inspection station;
- directing light energy at the plurality of groups of items;
- obtaining a reference reflectance signal corresponding to a package containing conforming items;
- acquiring an actual reflectance signal from each of the plurality of groups of items in the package;
- comparing the actual reflectance signal from each of the items with the reference reflectance signal;
- determining whether the reflectance signal from each of the items conforms to the reference reflectance signal;
- rejecting the package if any of the individual item's reflectance signals do not conform to the reference reflectance signal; and
- accepting the package if all of the individual item's reflectance signals conform to the reference reflectance signal.

29. The method of claim 28, wherein obtaining a reference reflectance signal corresponding to a package containing conforming items comprises inputting a known signal into the spectrographic inspection station.

30. The method of claim 28, wherein obtaining a reference reflectance signal corresponding to a package containing conforming items comprises performing a calibration run on a package containing only conforming items.
31. A method of identifying non-conforming groups of items within a package, the package containing a plurality of groups of items, the method comprising:
- means for obtaining a reference signal corresponding to a conforming package;
 - means for obtaining a signal corresponding to each of the plurality of groups of items in the package;
 - means for comparing the signal corresponding to each of the plurality of groups of items with the reference signal;
 - means for determining whether any of the plurality of groups of items is non-conforming; and
 - means for segregating the package based on whether the package contains a non-conforming group of items.
32. The method of claim 31, further comprising means for segregating the groups of items that contain a non-conforming item from the groups of items that do not contain a non-conforming item.